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| 10/779,299 | 02/13/2004 | Andrew Kadatch | MS305998.1/MSFTP547US | 7435 |
| 27195 7590 12/27/2007 AMIN. TUROCY & CALVIN, LLP 24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET CLEVELAND, OH 44114 | | | EXAMINER TRAN, VINCENT HUY | |
| | | | ART UNIT 2115 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/779,299

Applicant(s)

KADATCH ET AL.

Examiner

Vincent T. Tran

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,8,10,11,13,14,16,18,20,21,26,28,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,8,10,11,13,14,16,18,20,26,28,30 and 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. This Office Action is responsive to the RCE filed on 10/31/07
2. Claims 1, 3-4, 6, 8, 10-11, 13-14, 16, 18, 20-21, 26, 28, 30, 31 are pending for examination.
3. The text of those sections of Title 35, U.S. code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

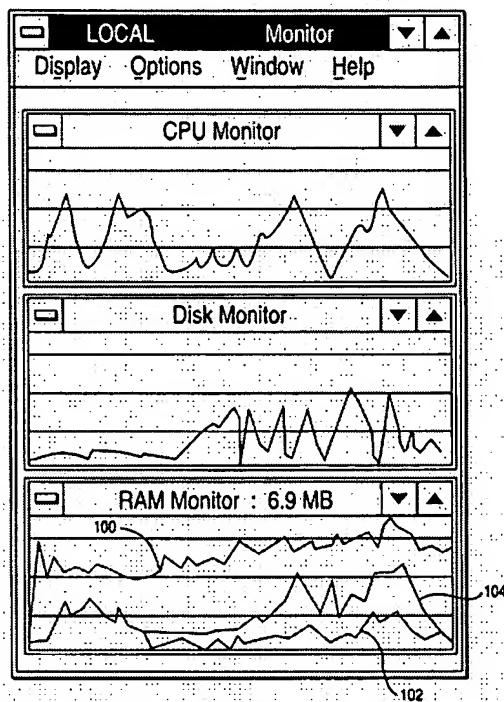
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 1, 3-4, 6, 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubal in view of Bishop.
7. As per claim 1, Dubal teaches a performance monitoring system, comprising:

a performance component [50 fig. 3] that initiates at least one thread involving at least one computing resource [col. 3 lines 44-50], the thread comprising at least one selected from a group consisting of a memory-intensive operation thread and a computationally intensive operation thread [col. 7 lines 17-20; col. 8 lines 5-38]; and

a monitoring component that obtains at least one performance parameter for the at least computing resource derived, at least in part, from the thread initiated by the performance component [col. 1 lines 17-20; col. 8 lines 30-38], the monitoring component generates a report based on the at least one performance parameter upon the occurrence of a predetermined user-selected event [col. 1 lines 14-19 *“Typically, when a diagnostic utility is launched, a predetermined set of diagnostic checks will performed to ascertain the functionality of the device being checked. A result set will be returned to the diagnostic utility in response to the checks, and the diagnostic utility will provide result feedback to the user.”* col. 8 lines 30-38 *“ In order to monitor CPU, memory, and other resources, it is necessary to be able to access such information...the operating system constantly tracks certain performance data and stores this data in a manner that enables the data to be used.”*; col. 10 lines 14-25].

Although Dubal teaches the performance component spawn a resource monitoring thread as a background task that is used to monitor system resource condition, Dubal does not teach the thread is a low priority thread.

Bishop teaches another method related to data processing system and more particularly to a monitor of a data processing system's internal resource utilization, such as memory, CPU, or peripheral device availability/utilization and *generating a report base on the performance* parameter [fig. 6



col. 13 lines 1-30; col. 22 lines 7-40]where these resources can give user of a data processing system key information on fine tuning the various system parameters to achieve a higher system performance. Specifically, Bishop teaches the resource utilization is measured by starting a thread and assigning the thread to the lowest priority level in the system.

At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the system of Dubal with the assignment of low priority thread as taught by Bishop. The motivation for doing so would have been to prevent the higher priority thread from starving while the monitoring thread is running.

8. As per claim 3, Bishop discloses the computing resource comprising at least one selected from a group consisting of a CPU and a memory resource [col. 10 lines 51-51].

9. As per claim 4, Bishop discloses the performance parameter comprising at least one from the group consisting of available CPU processing time, available memory, and available CPUs [col. 10 lines 55-56].

10. As per claim 8, Dubal teaches at least one selected from the group consisting of a light-weight operating system, a self-tuning application, a cell phone, a PDA, a CPU, an application programming interface, a computer, a server, and a handheld electronic [fig. 8].

11. As per claim 10, Dubal teaches at least one selected from the group consisting of a computer, server, and a handheld electronic device [fig. 8].

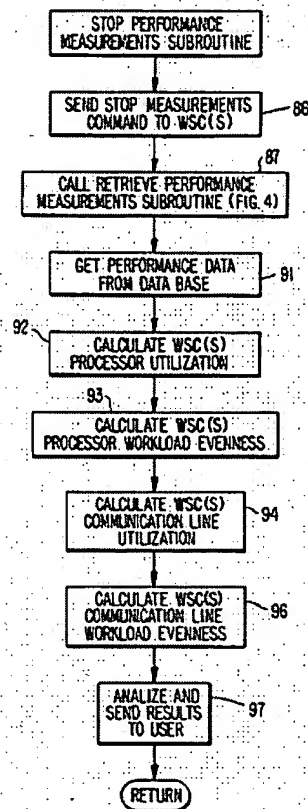
12. Claims 11, 13-14, 16, 18, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Keil.

13. As per claim 11, Keil teaches a computer implemented performance monitoring system [col. 1 lines 34-41], comprising:

a performance component [10 fig. 1] that initiates at least one high frequency interrupt involving at least one computing resources [col. 3 lines 19-29; fig. 7]; and

a monitoring component that obtains at least one performance parameter for the computing resource derived, at least in part, from the high frequency interrupt initiated by the performance component [fig. 5], the monitoring component generates a report based on the at least one performance parameter upon the occurrence of a predetermined user-selected event [col. 8 lines 5-25].

FIG. 5.



"The manner in which processor 11 uses the data contained in data base 14 to arrive at performance characteristics of the attached workstation controllers will now be discussed. The workstation controller processor utilization is calculated by the following equation in block 92:
(24) Note that determining processor utilization by using an idle loop counter is accurate, simple, and does not degrade the performance of the processor.

(25) The workstation controller processor workload evenness is calculated by the following equation in block 93.

(26) The workstation controller communications line utilization is calculated by the following equation in block 94:

(27) The workstation controller communications line workload evenness is calculated by the following equation in block 96:

(28) In block 97, the calculations performed in blocks 92, 93, 94, and 96 are analyzed and the results of this analysis are sent to the user."

Keil does not explicitly teach the high frequency interrupt comprising an interrupt with a frequency of at least 300 Hertz. However, Keil particularly teaches the sample rate should be fast

enough to get good statistical sample but not too fast to become a burden on the processor.

Therefore, it would have been obvious design consideration to one of ordinary skill in the art at the time the invention was made to have made the interrupt frequency of Keil as 300 Hertz since one would have expected applicant's invention to perform equally well with either the fast interrupt frequency taught by Keil or the claimed 300 hertz because both interrupt frequency values perform the same function of attaining a good statistical sample to evaluate system performance.

14. As per claim 13, Keil teaches the computing resource comprising at least one selected from the group consisting of a CPU and a memory resource [claim 1].

15. As per claim 14, Keil teaches the performance parameter comprising at least one from the group consisting of available CPU processing time, available memory, and available CPUs [claim 2].

16. As per claim 18, Keil teaches the entity employing the method of claim 16 comprising a computer [fig. 1].

17. As per claim 20, see claim 18.

18. Claims 1, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berry et al. U.S. Patent No. 5,872,913 ("Berry") in view of Dubal.
19. As per claim 1, Berry teaches a well know performance monitoring system, comprising:
a performance component that initiates at least one low priority thread involving at least one computing resource; and
a monitoring component that obtains at least one performance parameter for the at least one computing resource derived, at least in part, from the low priority thread initiated by the performance component [col. 1 line 46 to col. 2 lines 8], the monitoring component generates a report based on the at least one performance parameter upon the occurrence of a predetermined user-selected event [col. 6 lines 34-53].

To obtain the count data stored in table 60, a user or user application program performs a system call which moves the data from the operating system portion of RAM 14 to a user-readable memory area. The count data may then be displayed on a display screen, printed on a printer, or accessed by a user in a variety of ways. The count data may be obtained at regular intervals to provide an interval report of processor utilization. For example, a system call made every five seconds is infrequent enough so as to have little effect on system performance. A system call every five seconds could provide the following type of data on a per processor basis:

| time | busy | interrupt | idle |
|----------|------|-----------|------|
| 10:01:00 | 58% | 5% | 3.7% |
| 10:01:05 | 40% | 6% | 54% |
| 10:02:10 | 50% | 5% | 45% |

The count data may also be used for remote diagnostics by a system administrator. The system administrator may query the count data at regular intervals or use an application program to query the count data at regular intervals as described above. The administrator is able to determine whether the remote machine is undergoing state changes indicating that an application is hung or that the machine is entirely idle, i.e. no state changes or few state changes. The exact method used to access and analyze the count data is not part of the present invention.

Berry does not teach the low priority thread comprising at least one selected from a group consisting of a memory-intensive operation thread and a computationally intensive operation thread.

Dubal teaches a resource monitoring thread which spawned as a back ground process to monitor system resource condition. Specifically, Dubal teaches the thread comprising at least one selected for a group consisting of a memory-intensive operation thread and a computationally intensive operation thread [see discussion in claim 1].

At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have modified the system of Berry with one low priority thread with memory and computationally intensive operations. The motivation for doing so would have been to provide the system the ability not only to monitor the CPU processing time but also the level of utilization of other component in the system.

20. Claims 11, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berry in view of Bishop.

21. As per claim 11, Berry teaches a well know method for facilitating computer system performance, comprising:

executing at least one high frequency interrupt involving at least one computing resource, the high frequency interrupt comprising an interrupt with a frequency of at least approximately 300 Hertz [designer choice];

obtaining at least one performance parameter for computing resource derived, at least in part, from execution of the high frequency interrupt [col. 2 lines 9-28]; and

generates a report based on the at least one performance parameter upon the occurrence of a predetermined user-selected event [see claim 1].

22. Claims 26, 28, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berc in view of Dubal and Bishop.

23. As per claim 26, Berc teaches a computer implemented method for facilitating computing system performance, comprising:

executing at least one high-frequency interrupt involving at least one computer resource [col. 4 lines 44-47; col. 1 lines 50-56]; and

obtaining at least one performance parameter for the computing resource derived, at least in part, from execution of at least one selected from the group consisting of high frequency interrupt [col. 2 lines 2-7; claim 1].

Berc does not teach executing at least one low-priority thread, wherein the low priority thread comprising at least one selected from a group consisting of a memory-intensive operation thread and a computationally intensive operation thread, and generating a report based on the at least one performance parameter upon the occurrence of a predetermine user-selected event.

Dubal and Bishop teach another method directed to the monitoring and capturing of data processing system 's resource utilization. Specifically, Dubal and Bishop teach a performance component that initiates at least one low priority thread to obtains at least one performance parameter for computing resource wherein the low priority thread comprising at least one

selected from a group consisting of a memory-intensive operation thread and a computationally intensive operation thread and the monitoring component generates a report based on the at least one performance parameter [see discussion in claim 1] upon the occurrence of a predetermined used-selected event [inherent to the system of Berc modified by Dubal and Bishop].

At time of the invention was made, it would have been obvious to one of ordinary skill in the art the have modified the system of Berc with the initiates of a low priority thread of Dubal and Bishop in order to accurate measure the availability of the CPU during idle time.

24. As per claim 28, see claim 18.

25. As per claim 30, see claim 30.

26. As per claim 31, see claim 21.

Allowable Subject Matter

22. Claim 21 allowed.

Conclusion

Examiner's note:

Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially

teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Prior Art not relied upon:


Please refer to the references listed in attached PTO-892, which, are not relied upon for claim rejection since these references are relevant to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent T. Tran whose telephone number is (571) 272-7210. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas c. Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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